

Lysozyme and IgA Concentrations in Serum and Saliva from Psoriatic Patients

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Significantly lower lysozyme concentrations were found in saliva of 15 psoriatic patients compared with controls, whereas in serum, lysozyme activity, was significantly higher than in controls. The concentrations of IgA in serum of psoriatic patients were significantly higher than in controls, whereas in patients' saliva IgA concentrations were not significantly different from the controls. The findings indicate that lysozyme and IgA may be of significance in the pathophysiology of psoriasis. **Key words:** Psoriasis vulgaris.

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Several groups of workers have demonstrated that in psoriasis, polymorphonuclear leukocytes, monocytes and macrophages behave abnormally (1-4). Psoriatic patients also frequently have active lesions heavily colonized by *Staphylococcus aureus* and resident cocci without clinical signs of infection (5, 6), and severe hospital epidemics traceable to clinically healthy psoriatic patients have led to the assumption that psoriatic patients are protected against superficial bacterial invasion.

Lysozyme is a low-molecular-weight cationic protein which is synthesized in and continuously released from monocytes or macrophages (7, 8). Lysozyme found in saliva and other secretions is probably synthesized by glandular cells (9, 10). This bacteriolytic enzyme is a major constituent of the macrophages (11), and it can influence the functions of human granulocytes (7, 12) as well as lymphocytes (13). Moreover, by inactivating viruses (14) and by virtue of its antifungal effect (15) it is considered to play a role in defence mechanisms against microbiological infections.

IgA and lysozyme are also present in human skin and it is suggested that both contribute as humoral components to the skin's established cellular defence system. IgA is well known as a surface protective factor in the inactivation of microorganisms in all internal body secretions. Moreover, a close linkage between lysozyme and secretory IgA has been suggested (9), and recently we found significantly reduced values of both lysozyme and IgA in saliva of patients with atopic dermatitis (16). Reports on the activity of lysozyme in serum of psoriatic patients, however, have been conflicting (17, 18), whereas IgA levels in serum are commonly found to be elevated (19).

This study was designed to investigate whether lysozyme and IgA as inflammatory- and immuno-modulating factors may add new pieces to the puzzle of psoriasis.

MATERIAL AND METHODS

Patients

Fifteen patients, aged 24 to 51 years (average 38 years), with active plaque psoriasis involving 5-10% of the skin surface, and not complicated by arthritis, were studied. None of the patients studied had been receiving systemic steroids or immunosuppressive drugs for the last 6 months. No other systemic therapy or phototherapy was given at the time of the study.

Fifteen healthy medical students with no history of psoriasis served as controls.

Serum preparation

Blood samples were collected by venepuncture and allowed to clot for 30 min at room temperature. The sera were then separated by centrifugation at $800 \times g$ for 10 min and stored at -20°C until required.

Saliva preparation

Saliva samples were taken in the morning before breakfast and tooth-brushing, placed in plastic tubes and immediately stored at -20°C .

Lysozyme determination

The procedure of measuring the lysozyme activity by a lysoplated method has been described previously (20). In brief, 40 μl of the solution to be tested was applied in wells in 1% agarose (Litex, Denmark) containing 0.5 g/l dried *Micrococcus lysodeicticus* (Sigma Chemical Company, USA). Both agarose and lysozyme standard were dissolved in 15 M phosphate buffer, pH 6.3. The agar plates were then incubated at 37°C for 22 h. The diameters of the zones were finally

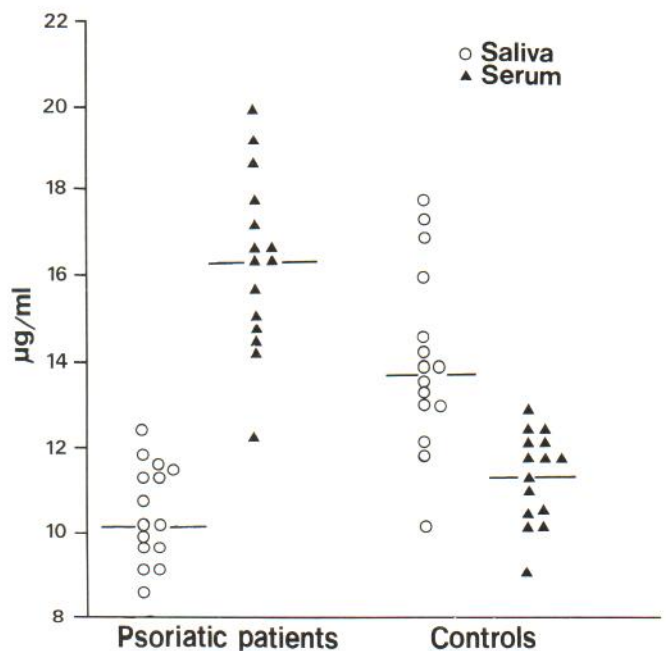


Fig. 1. Lysozyme activity in psoriatic patients vs. controls. —, Median value.

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